

*Patent Application Serial No. 10/5981,083***AMENDMENTS TO THE SPECIFICATION:***Paragraph at page 13, line 27:*

As shown in FIG. 2, operation time t of the heat pump apparatus is detected by the timer 12, and evaporator pressure P_e $[(=)]$ and evaporation temperature T_e $[(=)]$ are estimated using Table of the operation time t and the evaporator pressure P_e $[(=)]$ and evaporation temperature T_e $[(=)]$ prepared in advance (Step 41). Suction temperature T_s of the compressor 31 is then detected by the first temperature sensor 38, and a superheat value $TSH (=T_s - T_e)$ is estimated using the detected value T_s and the evaporation temperature T_e estimated at Step 41 (Step 42). Next, the superheat value TSH estimated at Step 42 is compared with the target superheat value TC (Step 43). In the case where the superheat value TSH is larger than the target superheat value TC at Step 43, the control means 14 controls flow resistance of the expansion valve 33 to become smaller (Step 44B), and then, the procedure is returned to Step 41. On the other hand, in the case where the superheat value TSH is smaller than the target superheat value TC at Step 43, the control means 14 controls flow resistance of the expansion valve 33 to become larger (Step 44A), and then, the procedure is returned to Step 41.